

Ziyue “Alan” Xiang

Research Assistant

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Education

- **Ph.D. in Electrical and Computer Engineering** Aug. 2020–Present
Purdue University, West Lafayette, Indiana, USA
- **Msc. in Computer Science** Aug. 2018–May 2020
Syracuse University, Syracuse, New York, USA
- **Berkeley International Study Program** Aug. 2016–Dec. 2016
<https://bisp.berkeley.edu/>
University of California, Berkeley California, USA
- **Bsc. in Information and Computing Science** Sept. 2014–June 2018
Sun Yat-sen University, Guangdong, China
– Best undergraduate thesis award

Experience

- **Research Assistant** Aug. 2020–Present
Video and Image Processing Laboratory (VIPER), ECE, Purdue University
<https://engineering.purdue.edu/~ips/>
– Conducting research under the SemaFor program
<https://engineering.purdue.edu/SEMAFOR/>
– Investigating reliable and cost-effective approach to counter deepfake and other types of media manipulation techniques that bring substantial threat to the credibility of information
- **Teaching Assistant** Jan. 2020–May 2020
EECS, Syracuse University
– Teaching assistant of *CIS-375: Discrete Mathematics* lectured by Prof. Andrew C. Lee
– Responsible for grading, hosting office hours, and preparing recitation materials
– Researched and practiced the transition to online learning during the COVID-19 pandemic
- **Research Assistant** Aug. 2018–July 2020
SOS+CD Lab, iSchool, Syracuse University
<https://scienceofscience.org/>
– Developed techniques to detection figure manipulation in scientific publications
– Assisted in a successful grant application from US Office of Research Integrity
– Participated in the organization of the first Computational Research Integrity Conference
<https://cri-conf.org/>

Publication

2021

Ziyue Xiang, János Horváth, Sriram Baireddy, Paolo Bestagini, Stefano Tubaro, and Edward J. Delp (June 2021). “Forensic Analysis of Video Files Using Metadata”. In: *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR) Workshops*

Daniel E. Acuna and **Ziyue Xiang** (2020). “Estimating a Null Model of Scientific Image Reuse to Support Research Integrity Investigations”. In: *arXiv preprint arXiv:2003.00878*. URL: <https://arxiv.org/abs/2003.00878>

Ziyue Xiang and Daniel E. Acuna (2020). “Scientific Image Tampering Detection Based On Noise Inconsistencies: A Method And Datasets”. In: *arXiv preprint arXiv:2001.07799*. URL: <https://arxiv.org/abs/2001.07799>

Projects

L^AT_EX

- **L^AT_EX 3 Tutorial**

<https://www.alanshawn.com/latex3-tutorial/>

One of the first practical tutorials for the L^AT_EX 3 programming language

- **The *luaprogtable* package**

<https://www.ctan.org/pkg/luaprogtable>

A LuaT_EX package that provides programmable table interface

Computer Vision/Machine Learning

- **Better performance evaluation for image manipulation detection**

<https://www.alanshawn.com/tech/2020/02/20/mf-perf-eval.html>

Uncovering the problems of existing performance evaluation methods for image manipulation detection, calling for better techniques

- **Properties of robust features from MNIST**

https://github.com/xziyue/robust_mnist_feature_py

Extracting and studying the properties of robust features from the MNIST dataset, inspired by Andrew Ilyas, Shibani Santurkar, Dimitris Tsipras, Logan Engstrom, Brandon Tran, and Aleksander Madry (2019). “Adversarial examples are not bugs, they are features”. In: *arXiv preprint arXiv:1905.02175*

Computer Network

- **VPN mechanism demonstration**

<https://www.alanshawn.com/vpn-demo/>

- **WPANTAP: a TAP interface for Linux-wpan**

<https://github.com/xziyue/wpantap>

Computer Graphics

- **The PyCG Series**

https://www.alanshawn.com/pyopengl_series/

A series of experiments with computer graphics algorithms in Python with the help of PyOpenGL and other tools

Skills

Python C++ Cython Lua HTML/CSS/JavaScript L^AT_EX Haskell Julia
 Data Mining Data Visualization Machine Learning Computer Vision Linux Security Cybersecurity
 tensorflow Apache Spark